

## ABSTRACT

The invention provides a high quality identifiable fluoride crystalline optical microlithography lens element blank for formation into an lens element of a microlithography system. The highly qualified fluoride crystalline characteristics of the fluoride optical 5 lithography lens blank ensure its beneficial performance in the demanding microlithography manufacturing regime which utilizes high energy short wavelength ultraviolet laser sources. The fluoride crystalline optical lithography lens element blanks are comprised of multiple adjoining abutting crystalline subgrains with low boundary angles.